

**ATTACHMENT 19 – *DFG-OSPR CALCULATION OF SPILLED QUANTITY***

**COSCO BUSAN**

**BUNKER TANKWISE PRESENT DISTRIBUTION AFTER COLLISION (AFTER REMAINING FO TRANSFERRED FROM 3P & 4P TO FO DB, O'FLOW, SETT & LS SETT TK)**

DATE: 8-Nov-2007

Time: 1700 Hrs

NAME	100 % Capacity (M3)	SOUNDING	ULLAGE	CUBIC M	
NO3 P	879.3			5	Damaged tank
NO3 S	879.3		1440	92	
NO4P	864.2		1537	40.5	Damaged tank
NO4 S	864.2		290	736.5	
NO5P	933.9		266	819.6	
NO5 S	933.9		290	805.7	
NO6 P	746.2		1118	223.7	
NO6 S	746.2		1140	238.1	
DB TK	501.5	235		453.3	
OVERFLOW	176.5	278		117.1	
SETT TK	123.2		143	113.3	
SERV TK	120.6		383	89.1	
LS SETT	120.5	978		91.2	
LS SERV	120.6		345	92.2	
			TOTAL	3917.3	

**Calculation of spilled quantity:**

Based on volumes of oil in damaged tanks (3P & 4P) and tanks where FO transferred (DB, Overflow, settling and low sulphur settling tank)

Damaged tanks	Departure ROB (m3)	Present ROB (M3) at 1700 Hrs on 08/11/07	Difference
FO 3(P)	91	5	86
FO 4(P)	745	40.5	704.5
		Total diff	790.5

Tanks where oil transferred	Departure ROB (m3)	Present ROB (M3) at 1700 Hrs on 08/11/07	Difference
Fuel oil DB tank	26.7	453.3	426.6
Overflow tank	49	117.1	68.1
FO settling tank	110.1	113.3	3.2
Low Sulphur sett tank	1.7	91.2	89.5
		Oil transferred	587.4

Estimated Qty of FO spilled =  $790.5 - 587.4 =$  **203.1** M3

Remark: 1) Due to damage FO tank 3(P) could not be sounded and a rough figure of unpumpable quantity remaining in 3(P) was taken as 5 M3. Exact amount will be known after actual sounding of unpumpable oil.

*[Signature]*  
OSPR  
(707) 372-9888

*[Signature]* COSCO BUSAN  
MASTER

3026

Before DB 26.68

Before 4P 753.91

Before 3P 90.95

871.54 m

After DB 354.30

After 4P 264.75

After 3P 32.86

651.91

Lost = 219.63 m<sup>3</sup>

415 399 3543  
WK

214 766 8827  
cell

= 58,020.107 gal

= 1,841.908 Bbl

MST3 MARTIN

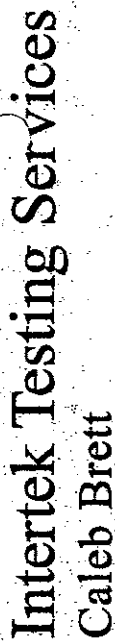
DATE: 6-Nov Time: 0900

TRIM: -1.0					
NAME	SOUNDING	CUBIC M	TEMP	SPEC GRA IN 15 C	MT
NO3 P	14.18	90.85	39	0.9873	80.4
NO3 S	14.37	101.11	39	0.9873	98.3
NO4 P	2.53	753.91	19	0.9875	742.5
NO4 S	2.41	761.03	16	0.9875	751.1
NO5 P	2.6	820.2	17	0.9873	808.7
NO5 S	2.85	806.17	17	0.9873	794.9
NO6 P	11.38	228.48	18	0.9873	225.1
NO6 S	11.49	216.8	18	0.9873	213.6
LDB TK	0.17	26.68	15	0.9873	26.3
OVERFLOW	1.16	49	45	0.9873	47.4
SETT TK	7.59	110.08	68	0.9873	105
SERV TK	73.56	117.09	90	0.9873	110
LS SETT	0.16	1.72	65		1.6
LS SERV	10.6	99.1	65		94
				TOTAL	4098.9
DO STR					
DO SETT	2.16	26.766		0.85	22.8
DO SERV	4.41	54.7		0.85	46.5
				TOTAL	69.3

#3P      90 m<sup>3</sup>      Pusan      IFO 380  
             40 m<sup>3</sup>  
             — 50 m<sup>3</sup>.

to DB Tk.

#4P      742 m<sup>3</sup>      LB  
             to DB Tk      560      IFO 380  
                             182 m<sup>3</sup>



VESSEL	COSCO BUSAN	CUSTOMER PRODUCT DESCRIPTION	Bunker Fuel Oil	PORT/TERMINAL	Anchorage #9 SF	DATE	Nov. 15, 2007
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1. VESSEL HISTORY FROM CHIEF ENGINEER				2. REMARKS	
AVERAGE BUNKER CONSUMPTION PER DAY	WHILE AT SEA	WHILE IN PORT	WHILE AT ANCHORAGE	LAST PORT OF CALL	DEPARTURE TIME
	225.0 MT	12.0	12.0 MT	LONG BEACH, CA.	NOV. 05, 2007 / 1818H
				BUNKERS ON SAILING FROM LAST PORT	
				1500.13	
				Cons. in Port & @ Anchor = 4.5 mth	

3. INSPECTION DECK		DRAFT	5.70 M.	FWD	8.15 M.	AFT	TRIM CORRECTION	YES	NO
VESSELS TANKS	IMAGES/ILLUSTRATIONS	CO. (BBLS) TEMP	TEMP	TEMP	TEMP	TEMP	TEMP	TEMP	TEMP
3P	OBSERVED TANKS								
3S	12.738	4452	96.0	11.7	0.9863	4391.008	0.19430		
4P	14.880 (u)	377	68.0		0.9970	375.869			
4S	12.888	4461	82.5		0.9914	4422.635			
5P	14.172	5155	75.5		0.9941	5124.586			
5S	11.774	4295	156.8		0.9628	4135.278			
6P	11.270 (u)	1560	70.5		0.9960	1553.760			
6S	0.051	2	60.0		1.0000	2.000			

4. INSPECTION PRIOR TO SAILING	DRAFT	FWD.	AFT.	TRIM CORRECTION	YES/NO	LONG TONS/METRIC TONS
LS HFO SERV.	8.863	520	117	0.9663	502.476	0.15430
HFO SERV.	8.292	487	7	0.9584	466.741	
LS SETT	11.992	703	7	0.9673	680.012	
HFO SETT	11.954	718	7	0.9597	689.065	
DB TRNK.	1.427	1688	7	0.9905	1671.964	
O/FLOW	0.875	223	7	0.9882	220.369	
TOTAL		24641			74235.711	
	TOTAL	ms in	mm		3917.622	
	TOTAL	LONG	TONS		3739.570	

DID VESSEL BUNKER AT THIS PORT?		API BUNKER LOADED		QUANTITY DRADED PER RECEIPT:		TOTAL G.S.V. BBL/SM <sup>3</sup>		LONG TONS (METRIC TONS)	
<input type="checkbox"/> YES <input checked="" type="checkbox"/> NO				N/A		3799		3799.59	
				BBL/TONS		Inspector		Chief Engineer	
						Chap			

FORM # 2-007-87